

# Chrysanthemums

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The chrysanthemum session divided itself into three separate parts: insect control, disease control and the light-temperature relationship.

Dr. Naegele was asked his opinion of Systox for the control of mites and aphids.

A. For outdoor pompons it was not anymore effective than the combination sprays now in use. For crops in the greenhouse, the soil drench, at the rate of 1/2 pound per 1,000 sq. ft. gave protection up to three months. There is some danger of marginal burn where nitrate levels had been allowed to get low. The commercial drench is 1/2 pint of 21% material per 1,000 sq. ft.--two applications applied 10 days apart.

Q. How frequently should application be made?

A. Good control for three months can be obtained from one treatment, but ideally applications should be made every two months.

Q. We have found that on our houses, we need to apply every four weeks. Is there any danger of leaching from the soil?

A. The uptake by the plant is so rapid that leaching is not too important a factor. I do not know why your plants should not keep their protection longer than four weeks.

Q. What is the situation with bacterial stem rot of mums?

A. (McFadden) This disease is relatively new, being first seen in 1950-'51. It shows up in periods of high temperature, from 70°F up, and under conditions of high humidity. Entry into plant tissue is apparently made through wounds. There is a possibility that it could come through cuttings from infected stock plants. It has been found that up to 5% of apparently good cuttings can be carrying the organism, and it may be carried for as long as 15 months before the right conditions arise for it to show up.

Q. Will pinching spread it?

A. Yes. Anywhere you touch a cut may allow you to carry the disease from plant to plant.

Q. Will infected cuttings survive?

A. Yes. It may show up in only a few cases, and even some of these may heal and grow on again. Infection from a pinch shows up as a downward wilt spreading from the pinch.

Q. Is there any cure for it?

A. No. The best method at present is the building up of a disease-free stock and complete sanitation in handling cuttings from them.

Q. Will deep planting have any effect, or cuttings which are unduly vegetative?

A. No answer for sure. We feel that harder tissue tends to block the spread of the wilt, and that soft succulent growth favors it. It seems to be more prevalent where mums are grown hydroponically because succulence and humidity are usually higher.

Q. What can you do when you are planting during high temperature periods? We had a lot of variety Seagull, planted July 10, which developed lesions near the base and folded down.

A. One would have to change the environment or use disease-free cuttings.

A. (Dr. Dimock) Avoid using fingers when pinching; snap out the tip instead. As yet we have no posi-

tive means of insuring disease-free plants.

A. (McFadden) Culturing has been suggested, or you can get your mother stock by rooting short tips only. Control will be a problem until we know more about the disease.

Q. Are some varieties more susceptible?

A. There are varietal differences but none are immune.

Q. Is there any new spray or fungicide of value in controlling botrytis blight?

A. (Dr. Dimock) Nothing new. You may apply a low concentration (8 oz. per 100 gals.) of Parzate or Captan (Orthocide) or similar fungicide as a fog applied through multiple nozzles until blooms are cut; this is especially desirable in periods of foggy weather. This is a simple operation but it builds up a residue on the leaves which is not attractive. By using a small amount of detergent, this deposit can be made less unsightly but it cannot be completely eliminated.

Q. Can you use dusts?

A. The control is not as good and the dusts are just as conspicuous to the eye.

Grower: In Pennsylvania we use dusts satisfactorily and feel we have less deposit.

Grower: In Florida we get injury with dusts.

Q. What is the control for Septoria leaf spot?

A. (Dr. Dimock) This one is easy to do. Any good fungicide, as long as it is thoroughly applied to the underside of the leaves, will keep it in check. We have been doing it here for 10 years. But once infection sets in, spray will not eliminate the spots; the disease has to run its course. The spray will only prevent spread.

Q. What has been the thrip situation this year?

A. Fewer cases in Connecticut.

Q. Are plantings for natural flowering tending to be made later than they used to be?

A. We have been retarding our dates by 3-4 days and feel results are better. This is in cloth house pompon production. Every year we plant later and this year we planted as late as July 28. We find this gives us a better spray.

A. We are planting in July, August after tomatoes.

Q. What was the cause of poor bloom formation; such doubling of the bloom in standards grown naturally this year? It was also noticed in August in pompons under cloth house. It was also noticed with the Christmas crop which had undershot buds. Was it tarnished plant bug or poor bud set?

A. (Miller) This condition was noticed three or four years ago and is attributed to a good bud initiation that did not go on to complete a bud because high temperature interrupted the growth cycle. This was followed by a second bud initiation later, giving the double blooms. You can prevent it by pinching later, postponing bud set. There are several weeks at that time of the year when natural bud set occurs where the weather can reverse the normal growth pattern.

Q. Is it a temperature factor?

A. Yes, it will happen with cool, cloudy weather followed by very bright weather. It is definitely a



light-temperature interplay.

A. (Dr. Post) In certain varieties, a cloudy period up to July 14 last summer, sufficiently shortened the days to initiate crown bud set way ahead of the normal date. This weather was followed by ten weeks of bright weather which held the other bud development back until September 15. Thus we had two sets of buds on these varieties. A similar situation happened in 1947. Buds will initiate with a 9 1/2 hour night but need a 10 1/2 hour night to develop.

Q. Can you prevent this situation?

A. (Post) You might plant later to miss such a weather condition. But you should not grow mums naturally in their normal season because you cannot control the weather. Use shading and lighting methods to control the light factor so that you get a good bud formation and spray.

Q. Would cold nights have anything to do with it?

A. Not this year in August. A crown bud, given right light factor will set in four days, or almost immediately after a pinch.

Marc Cathey, then was introduced to discuss the temperature factor as it effects budding.

Q. Why are certain varieties good only at certain times of the year?

A. To study this temperature factor, tests were run under controlled temperature ranging from 40° to 80° F and with a large number of varieties. It appears that there is an inhibitive factor controlled by temperature. As a result, Mr. Cathey regrouped the varieties according to their temperature response.

Group one, example Shasta, will flower sometime, somehow. It is affected by temperature but bloom will develop.

Group Two, example Encore, require a high temperature continuously over 60° F to set bud and to flower. This temperature effect has been traced even into cuttings taken from stock plants which had not

received optimum temperature. Generally speaking, 9 to 11 week varieties are in this group.

Group Three, example Revelation, will keep vegetative at temperatures around 70° F. Needs temperature around 60° F to develop flower after bud shows color. These varieties are generally the 11-14 week ones.

It has been found that such varieties are actually speeded up in blooming by a lowering of temperature after the bud shows color. This is contrary to usual conditions where lower temperatures are assumed to retard growth. Encore for example, takes 90 days to flower at 80° F, but given 80° 'till bud shows color and then given 60° brings bloom in at 72 days.

The method of classifying varieties as 70-day, 80-day, etc. is based on one temperature throughout. But we know there is a varietal response to temperature changes, and we have been able to take 14-week varieties and bring them in at 11 weeks by temperature manipulation during winter months when temperature can be controlled (80° F 'till bud shows color then 50° F to flower rapidly).

Q. What may cause uneven blooming in some varieties?

A. The position the cuttings had on the stock plant may cause this. Cuttings should be graded for quality to bring more uniform blooming.

Q. What effect would high temperatures, as encountered in Florida, have on this? We had Encore coming in good, two weeks ahead of schedule and we have two other varieties, Bell Ray and Minstrel which are hanging on one month past their schedule date, which they met last year. In other sections of Florida this situation was not encountered. Defiance is another variety which was hard to bring in.

A. Defiance is normally a compound spray because it does not initiate rapidly.

Q. Would it be possible to list varieties according to their temperature response?

A. We may have to do this when we know more about it.